



Maintenance

QUALITY

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OPR: OO-ALC/LGQ/(Ms. Sandy Bryan)

Certify by: OO-ALC/LGQ (Mr. James L. Schroader)

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This manual contains the basic policies and procedures that establish and define a Quality System comparable to the ISO 9001, *International Standard*, for the Ogden Air Logistics Center (OO-ALC). This manual also satisfies the requirement of *AFMCI 21-115, OO-ALC Depot Maintenance and Quality Assurance (QA)*, and applies to all OO-ALC organizations and functions, excluding tenant organizations, whose activities impact the quality of products and services provided to the Center's internal and external customers. Glossary of References and Supporting Information are contained in Attachment 1.

SUMMARY OF REVISIONS

This manual has been revised to add to the Technology and Industrial Support Directorate (OO-ALC/TI), that the Laboratory (OO-ALC/TIEL), the Chemical Science Laboratory Section (OO-ALC/TIELC), and the Software Engineering Division (OO-ALC/TIS) do not operate primarily under the Maintenance Standardization Evaluation Program (MSEP), but instead, operate quality programs defined by ISO series quality standards, Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), and the Software Engineering Institute's (SEI) Capability Maturity Model (CMM) (paragraphs 1.5.4.1. and 1.5.4.2.); and "Quarterly Verification Inspections (QVI)" is changed to "Quality Verification Inspections (QVI) (paragraph 4.10.12.1.)." An * indicates a revision from the previous edition.

1. QUALITY POLICY, MISSION AND ORGANIZATION OF THE OGDEN AIR LOGISTICS CENTER (OO-ALC)

1.1. Introduction. This manual describes the OO-ALC Quality System. This system is designed to ensure OO-ALC organizations and functions provide products and services that meet customer needs and requirements.

1.2. Quality Policy Statement. OO-ALC is committed to procuring and producing only the highest quality products and services. Our philosophy is to continually work to improve the proficiency of the work force, facilitate continuous process improvement, and provide our customers with high quality aircraft, missiles, and other aerospace products and services on time, and at the promised cost.

1.3. Mission, Responsibility and Authority. The mission of OO-ALC is to equip, maintain, and sustain United States operational forces as they execute national defense policy around the world, by providing the highest quality products and services at an affordable price. The Center is assigned worldwide logistics management, maintenance, and testing support responsibilities for our nation's fleet of silo-based intercontinental ballistic missiles, aircraft landing gear, worldwide conventional munitions, embedded software, Space and C3I systems, and F-16 Fighting Falcon aircraft. The Center is also the System Program Director (SPD) for Mature and Proven Aircraft (MAPA). The product directorates support and maintain weapon systems for Center customers, the war fighters.

1.4. Organization and Functional Relationships. OO-ALC is organized in a hierarchical structure with all functions reporting to the Center Commander.

PRODUCT DIRECTORATES

Aircraft Directorate (OO-ALC/LA)

Commodities Directorate (OO-ALC/LI)

System Program Office (OO-ALC/LM)

Technical and Industrial Support Directorate (OO-ALC/TI)

QUALITY SYSTEM SUPPORT ORGANIZATIONS

Plans and Programs Directorate (OO-ALC/XP)

Logistics Management Directorate (OO-ALC/LG)

Specialized Management Directorate (OO-ALC/QL)

Environmental Management Directorate (OO-ALC/EM)

MAPA (OO-ALC/LC)

Contracting Directorate (OO-ALC/PK)

Safety Office (OO-ALC/SE)

Small Business Office (OO-ALC/BC)

F-16 Management Directorate (OO-ALC/YP)

Civilian Personnel Office (OO-ALC/DPC)

In addition, the Commander's Staff consists of Public Affairs Office (OO-ALC/PA), Commander's Action Officer (OO-ALC/CCX), History Office (OO-ALC/HO), Protocol (OO-ALC/CCP), Inspector General (OO-ALC/IG), Equal Employment Opportunity Counselor (OO-ALC/CCD), Staff Judge Advocate (OO-ALC/JA), Mobilization Assist to the ALC Commander (OO-ALC/CCR), Air Force Reserve Advisor (OO-ALC/CCV), Air National Guard Advisor (OO-ALC/CCG), and the Command Chief Master SSgt (OO-ALC/CCC).

1.5. Product Directorates:

1.5.1. OO-ALC/LA - Provides depot repair, modification, and maintenance support to major aircraft weapon systems, including the USAF and/or foreign military sales (FMS) F-16 Fighting Falcon, the USAF, Navy/Marines and FMS C-130 aircraft, and the A-10 Thunderbolt. Also provides advanced avionics and structural components test, repair and modification of F-4, F-15, F-16, F-111, C-5, C-130, C-141, KC-135, A-10, T-43, B-1, B-2, and B-52 aircraft. The Directorate provides operational commands with worldwide-deployable F-16 and A-10 aircraft battle damage repair capabilities. Also assigned to OO-ALC/LA is the 514th FLTS, and the 649th CLSS.

1.5.2. OO-ALC/LI - Responsible for the management of Weapon systems to actual depot level repair. Workloads include: Material Group Manager (MGM) for all Air Force landing gear, wheels, brakes, and tires; power systems, Power Conditioning & Continuation Interfacing Equipment (PCCIE), photonics, reconnaissance, and imaging systems. Air Force Technical Repair Center for photographic equipment, hydraulics, electronics, electrical accessories, instruments, power systems, pneudraulics, 20mm guns, launchers and adapters.

1.5.3. OO-ALC/LM - The ICBM (SPO) develops, acquires, and supports silo-based ICBMs and provides program direction and logistics support as the single face to the customer. Responsible for acquisition, systems engineering and depot repair support; manages equipment spares; provides storage and transportation; and, accomplishes modifications and equipment replacement. The ICBM Prime Integration Contract (PIC) Program Management Office, (OO-ALC/LM(3)), is charged with day-to-day execution and management of the PIC. The office is accountable to the SPD for cost, schedule, and technical performance of the ICBM prime contractor. OO-ALC/LM(3) supports the other SPO divisions by working with Engineering Service Modifications Guidance and Navigation Branch (OO-ALC/LMKE) to translate requirements for engineering services and/or modification/replacement programs into the necessary contracting actions.

1.5.4. OO-ALC/TI - Provides maintenance, engineering, and planning for industrial facilities; maintains chemical, material, and verification laboratory services; manages Non-Destructive Inspection (NDI), Precision Measurement Equipment Laboratory (PMEL), world-wide Mobile Depot Maintenance (MDM), battery and consolidated machine shops, administrative and contract support; maintains Depot Maintenance Activity Group (DMAG) infrastructure support, including real property maintenance in support of the Center's industrial processes; provides hardware technology and worldwide weapons system software support to include operational, simulation, and automatic test equipment applications; performs research and development studies, test and analysis of software and software applications; operates the USAF Software Technology Support Center (STSC); and manages engineering and technical advancement.

*1.5.4.1. OO-ALC/TIEL has Quality Assurance Programs that are managed under their respective plans which include: the TIELM/V Quality Manual, the Chemical Science Laboratories (TIELC) Quality Plan and the TIEL Chemical Hygiene Plan. Much of the work done in these labs is destructive testing or material analysis. No product or services from the labs are placed on DMAG end items. These laboratories are a sustaining engineering function providing analytical support to the industrial complex and do not perform depot maintenance production. The functional quality areas of the labs are certified or accredited and assured under the requirements of ISO/IEC 17025, ISO 9000, Environmental Protection Agency (EPA) and Occupational Safety and Health Administration (OSHA) regulations, as well as meeting all Air Force regulatory requirements. The following core inspection (CI) areas will be accomplished in the TIEL Laboratory in accordance with AF and AFMC guidelines: Technical data; tool control and accountability; training; support equipment; bench stock; operating stock, and work order residue; Foreign Object Damage (FOD); hazardous materials use/management; housekeeping; quality records; and safety. Because TIEL does not produce end-items and does not use standard Work Control Documents (WCD), the PAC task evaluation and WCD reviews will not be performed.

*1.5.4.2. The Software Engineering Division (OO-ALC/TIS) incorporates an extensive, internal quality assurance program in all engineering product lines, including, operational flight programs and mission planning software; material improvement projects and organic change proposal software; test station

development; hardware product development; electronic systems; and, printed circuit board manufacturing. The internal quality program supplements AF and AFMC quality programs and is based upon a triad of principles, 1) process quality assurance; 2) product quality assurance; and, 3) core MSEP compliance. The OO-ALC/TIS quality assurance program is derived from the Software Engineering

Institute's (SEI) Capability Maturity Model (CMM). CMM ensures that engineering processes are defined, repeatable, measured, and optimized utilizing quantitative management practices. SEI rated TIS at CMM level 5, which is the highest rating possible, placing the division in the top 5% of all software organizations world wide. Product quality assurance is achieved through maintaining strict adherence to documented processes, and rigorous testing against defined requirements at the component, sub-system and system levels of all products under development. TIS maintains compliance with all core MSEP areas applicable to OO-ALC/TIS. These include Maintenance General Practices, Avionics, Foreign Object Damage (FOD), Industrial Safety, Equipment Management, and Tool Control. Core MSEP quality compliance is achieved through an active program, which includes regular inspections by quality evaluators from the TI quality office.

1.6. Quality System Support Organizations:

1.6.1. OO-ALC/XP - Responsible for the management of plans, programs, studies, contingency or crisis action planning, and readiness, affecting the Center's current and future missions. Ensures that procedures are developed to provide for the transition of the Center from peacetime to wartime baseline. Functions as the Center manager for plans and policy to ensure optimal application of Center resources (manpower, land, and facilities) and a balanced capability to accomplish assigned Center workload to attain the optimum readiness posture. Manages the Center manpower requirements to include resource allocation, organizational control, and manpower studies. Functions as the Corporate Business Planner and accomplishes special projects at the discretion of the Center Commander. Makes recommendations to the Center Commander on placement of new missions within the Center.

1.6.2. OO-ALC/LG - Center focal point for all matters concerning requirements and supply support, including retail management, Shop Service Center (SSC) and Weapons System Service Center (WSSC) support and workforce management. Responsible for determining overall maintenance and repair capabilities for the Center; including oversight in planning, budgeting and execution of organic DMAG funds. Provides guidance, policy and procedures and the distribution of DMAG manpower resources and workload management. Provides Center supply support to include material management, inventory control, computer operations, weapon system support, and retail item managers (RIM). Provides system design, maintenance and support for logistic information systems and procedures. Responsible for management of the General Support Division (GSD) stock fund and item management personnel, including Supply Management Activity Group (SMAG) management, workforce management and Purchase Request/Military Interdepartmental Purchase Request (PR/MIPR) control. Responsible for performance of Supply Chain Management functions for F-16 unique avionics, structural and electromechanical secondary items. The center Quality Division (LGQ) resides in this directorate (refer to paragraph 2.2 of this manual).

1.6.3. OO-ALC/QL - Responsible for management and sustainment of programs set aside for tailored management procedures. Uses approved, streamlined procedures, to ensure adequate and timely program management, systems development, acquisition, integrated logistics, and security support for space; command, control, communications, and intelligence (C3I) systems; low observable technologies; foreign material acquisition and support and the western test and training range support.

1.6.4. OO-ALC/EM - Manages environmental programs, systems, and procedures to ensure compliance with federal, state, and local environmental laws and regulations and to minimize risks and potential liabilities while being responsible stewards over the natural resources; i.e. air, water, and land under jurisdiction of OO-ALC, Utah Test and Training Range, Little Mountain Test Annex, and Boulder Seismic Station.

1.6.5. OO-ALC/LC - Provides complete logistical support of assigned aircraft systems. Responsible for the acquisition of new/improved capabilities as well as the sustainment of existing systems/subsystems. Support for assignment systems includes acquisition, modification, engineering/technical support, maintenance and repair. Directs, plans and manages the interface between domestic and foreign customers and the directorate.

1.6.6. OO-ALC/PK - Responsible for all logistics support for various weapon systems and commodities, including the F-16 aircraft; the Minuteman and Peacekeeper ICBM's; aircraft and missile simulators; landing gear, wheels, brakes, and tires; cartridge and propellant activated devices; airborne photographic equipment; space, communications, mature aircraft, power systems; and all local installation requirements.

1.6.7. OO-ALC/SE - Provides leadership on safety policies and ensures a safe work environment for all military and civilian personnel and has mission requirements to support safety programs that are "Required by Law" for each safety discipline: Ground; Weapons; System and Flight.

1.6.8. OO-ALC/BC (Office of Small and Disadvantage Business Utilization) - Responsible for ensuring that a fair share of Air Force Procurement will be placed with Small, Underutilized, and Women-Owned Businesses, culminating in delivery of quality products to support the Air Force mission.

1.6.9. OO-ALC/YP - Manages the engineering and manufacturing development, production, modification, sustainment and worldwide deployment of over 3,900 F-16 A/B/C/D fighter aircraft for units of the Combat Air Forces of the United States and 19 foreign nations.

1.6.10. OO-ALC/DPC - Administers the Civilian Personnel Administration Program for the Base and Tenant organizations. Administers the base Civilian Man-Year Cost Management Program to include establishing and maintaining controls for the management of overtime, holiday pay, and assigned civilian personnel ceilings. Accomplishes skills coding and data entry of previous work experience and participates with managers and employees in planning and implementing Career Management Programs. Processes personnel action requests, within grade increases, leave, RIF, career tenure, and service awards. Manages and maintains civilian employee records, prepares and completes personnel actions, and accomplishes civilian pay determinations.

2. MANAGEMENT OVERSIGHT OF THE QUALITY SYSTEM:

2.1. Management Review. The Quality Management Board (QMB), OO-ALC/LGQ, and the Quality Assurance Integrated Process Team (QAIPT) are responsible for developing and implementing the Center Quality System. The objective of the AFMC's Back-to-Basics QA initiative is to provide product directorate and division managers with the oversight and visibility through autonomous surveillance and evaluations to improve the proficiency of the work force, and facilitate continuous process improvement. The surveillance and evaluation requirements consist of quality verification inspections (QVI), task evaluations (TE), core inspections (CI), Unit Compliance Inspection (UCI) Program, and Maintenance

Standardization Evaluation Program (MSEP) as mandated by AFMCI 21-115 and 21-132, *Depot Maintenance Technical Compliance Review Procedures*. The various quality performance indicators (QPI) collected within OO-ALC for QMB and directorate reviews are those mandated metrics in AFMCI 21-132 (refer to Hill AFB Instruction 21-115). Other forums for management review within the Center are the Strategic Planning process, Directorate and Division Workload/Management Reviews, and Business Reviews that include DMAG and Supply Management Activity Group (SMAG) reviews.

2.2. Management Representative. OO-ALC/LGQ serves as the Commander's management representative for the Center Quality System and also serves as the Center QA Focal Point. With assistance from members of the QAIPT, OO-ALC/LGQ is responsible for developing and maintaining the ALC Quality Manual, assessing Center compliance with this manual, and reporting Quality System status to the QMB. OO-ALC/ LGQ and the QAIPT directorate representatives have the responsibility and the authority for ensuring the requirements of this manual are fully implemented and maintained.

3. QUALITY PLANNING, DOCUMENTATION, AND QUALITY PLANS

3.1. Quality Planning:

3.1.1. Prior to beginning a new/revised workload, a Production Planning Team (refer to AFMCI 21-110) consisting of representatives from all phases of the production cycle assemble to accomplish/consider the following:

- 3.1.1.1. Develop workload quality requirements and ensure adequacy of the workload quality plan.
- 3.1.1.2. Identify critical characteristics/parameters for the product/service.
- 3.1.1.3. Ensure technical data is available.
- 3.1.1.4. Determine training requirements.
- 3.1.1.5. Plan any special quality requirements imposed by the customer.
- 3.1.1.6. Prepare work control documents (WCD) and Definitized Lists.
- 3.1.1.7. Assign Production Acceptance Certification (PAC) inspection codes.
- 3.1.1.8. Identify and assign "Q" codes for tasks/operations to receive quality verification inspections.
- 3.1.1.9. Determine data to be collected, what system is to be used, and who will analyze or use the results.

3.1.1.10. Identification and acquisition of any necessary controls, processes, inspection and testing equipment, special tooling, fixtures, facilities, resources, and skills required to accomplish the work and ensure product quality.

3.1.2. Depot maintenance activation, long-range planning and pre-production/production planning guidelines are provided in AFMCR 66-61, *Operational Planning*; AFMCR 66-62, *Operational Scheduling*; AFMCI 21-101, *Depot Maintenance Activation Plan (DMAP)*; and AFMCI 21-110.

3.2. Documentation. The documentation of the OO-ALC Quality System is defined as any policy, requirement, directive, and record that has an influence on, or evidence of, the quality of the aircraft, product, or service. The quality system is based on four levels of documents, each providing greater detail for action. At the top is this OO-ALC Quality Manual, which is based on Air Force and International Standards tailored to OO-ALC's needs. The second level consists of various publications and operating instructions referenced in this manual. The third level consists of detailed directorate, division or workload specific quality plans, production WCDs, (and technical data, drawings, specifications, test specs., etc.) which provide the technicians with working level instructions. The fourth

level consists of records, forms, reports, and completed work documents that provide the objective evidence of quality.

3.3. Quality Plans. All directorates with industrial processes (OO-ALC/LA, OO-ALC/LI, OO-ALC/LM, and OO-ALC/TI) will create and maintain specific quality plans at directorate and/or division level. These plans should address and document how the organization intends to accomplish and comply with the applicable requirements of this manual, *AFMCI 21-115*; ISO 9001, and any other directives that are determined necessary to ensure product conformance and customer satisfaction. Quality plans are published, reviewed, and controlled internally within each product directorate according to guidelines established in *AFMAN 10-401, Operational Plan and Concept Plan Development and Implementation*. Quality system support organizations will have internally documented procedures, as deemed necessary, to supplement higher authority publications. This manual and all workload quality plans will be reviewed for currency and adequacy at least annually.

4. QUALITY SYSTEM DESCRIPTION

Introduction. The goal of the OO-ALC Quality System is to provide total satisfaction to our customers by ensuring them that we provide the highest quality products and services. Although the responsibility for quality belongs to all organizations, functions, and personnel at this Center; each product directorate and director is responsible for matters relating to product quality. Quality of products and services is assured by ongoing inspection and testing performed by the PAC certified technicians performing the job, and independent surveillance and evaluations performed by the product directorates quality organization as mandated by *AFMCI 21-115* and detailed in directorate/division workload specific quality plans. Product inspection and defect data are analyzed by directorate personnel for trends and necessary corrective action as outlined in *AFMCI 21-132* and *Hill AFB Instruction 21-115*. The principles of ISO 9001; the AFMC Back-to-Basics QA initiative, management oversight of the quality system; the PAC and Training Program, the Software Capability Maturity Model (SW-CMM), and other quality system standards outlined in this manual form an integrated quality program that ensures customer satisfaction and complies with AFMC and private sector quality system requirements. The OO-ALC Quality System is further defined by the following 21 elements.

4.1. Organizing for Quality. The following individuals, teams, forums, and programs work in concert to implement the Center's quality policy.

4.1.1. Center Commander - Provides top-level quality policy and leadership.

4.1.2. OO-ALC Strategic Plan – The OO-ALC Strategic Plan aligns the Center's planning process to support AFMC's Strategic Plan. The plan includes goals, mission essential tasks (MET), performance measurements, and standards. The Center's senior managers conduct monthly reviews of the six business areas' METs.

4.1.3. The QMB is the Center's senior management board and consists of the directors from all directorates, major staff organizations, and chaired by OO-ALC. The purpose of this meeting is to keep Center senior-level managers informed of the health and well being of the QA program, cross-feed information to all senior managers, evaluate program performance, and make program improvements. This body meets at least monthly. Quality performance indicators as required by *AFMCI 21-132* and *Hill AFB Instruction 21-115* are reviewed quarterly.

4.1.4. Forum of Fixers - Consists of key Depot Maintenance Activity Group (DMAG) production division chiefs. The Center's Corporate Board empowers the Forum to manage production, quality, and cost aspects of the depot's maintenance activities. The primary focus of the Forum is to find common solutions to make the Center more competitive. Typically their actions address process improvements that cut across the Center in areas such as finance, training, personnel actions, and cost reductions.

4.1.5. OO-ALC/LGQ - Acts as the principle advisor on quality management, sets the commander's quality agenda, and monitors quality program implementation and execution through the OO-ALC QMB. OO-ALC/LGQ assists management in implementing Center goals and objectives that integrate senior leadership commitment and continuous quality improvement into Center processes. OO-ALC/LGQ periodically reports to the QMB and Forum of Fixers on the status of Center product quality programs, serves as chair of the Center QAIPT, represents the ALC on the AFMC QAIPT, and is responsible for ensuring pertinent information is shared with other directorates (reference *Hill AFB Instruction 21-115*).

4.1.6. OO-ALC QAIPT – The QAIPT is chaired by OO-ALC/LGQ and consists of Quality Focal Points assigned QA responsibilities from OO-ALC/SE, OO-ALC/LA, OO-ALC/LI, OO-ALC/LM, OO-ALC/PK, and OO-ALC/TI directorates. OO-ALC/LGQ will maintain a current listing of QAIPT members. The QAIPT provides a forum to address HQ AFMC and Center issues, initiatives, and policies applicable to the quality of OO-ALC products and services. The QAIPT assesses the Center quality system and makes improvements to this manual as needed.

4.2. Quality Assessment Programs. The following assessment programs form the framework of our quality system.

4.2.1. MSEP – An annual review and evaluation conducted by the AFMC/IG to assess compliance with technical data, maintenance training and PAC, quality assurance and other maintenance disciplines that impact product and process conformance throughout depot maintenance operations. The MSEP is conducted using program-level and task specific checklists published by AFMC/IG, plus selected tasks and operations are evaluated by performance of task evaluations and quality verification inspections (reference *AFMCI 21-132*).

4.2.2. UCI – The UCI is conducted every three years by the AFMC/IG. It is not totally focused on depot maintenance as the MSEP, rather covers a wider spectrum of peripheral Center requirements. The UCI is conducted using program-orientated checklists published by the AFMC/IG. Task evaluations and quality verifications inspections are not performed (reference *AFMCI 21-132*).

4.2.3. MSEP/UCI Unit self-inspection - The self-inspection is conducted annually by Center personnel using as a minimum, all AFMC/IG MSEP and UCI checklists. The OO-ALC/IG facilitates the UCI Inspection and OO-ALC/LGQ facilitates the MSEP. Inspection requirements, analysis of findings, and reporting procedures are detailed in *AFMCI 21-132* and *AFMCI 90-202/Hill AFB Supplement 1, Commend Level Inspector General Activities*.

4.2.4. The surveillance and evaluations performed by the product directorates quality organizations evaluate maintenance disciplines, compliance, and the technical proficiency of the workforce on a continual basis. The resulting corrective/preventative actions taken to correct the findings and the monthly rollup, analysis, and review of the data at directorate-level and quarterly at Center-level provide all managers the visibility to properly assess and react to quality/process deficiencies (refer to *AFMCI 21-115* and *AFMCI 21-132*).

4.2.5. PAC Program - The PAC Program is an integral part of the quality system described in this manual. PAC ensures production personnel are trained and certified to perform assigned tasks. It also places responsibility for product quality on the responsible product directorate and conformance to requirements for products and services on the individual performing the work. This self-inspection by the individual on all tasks is also assessed for conformance by a second PAC certified technician and re-certified on all critical, safety of flight, or other tasks designated by the Production Planning Team. The PAC focal point is assigned to OO-ALC/LGQ. Details of the PAC program are published in *AFMCI 21-108/Hill AFB Supplement*, and product directorate OIs.

4.2.6. Conformance Verification Program (CVP) - The purpose of the CVP is to evaluate the quality level of the numerous component parts procured in support of organic maintenance or for resale to end users. Under this program, a monthly sample, both random and selective, of incoming parts from contractors is inspected and/or tested to determine conformance to contract specifications. Any problems with nonconforming parts are resolved with the contractor and appropriate restitution is made to the Air Force. The CVP is managed in OO-ALC/TIEL.

4.2.7. Deficiency Reporting (DR) - When defective products are discovered, either internally or by an end user, the DR system is used to report, investigate, and resolve the deficiency according to *TO 00-35D-54, USAF Deficiency Investigating and Reporting System*. The DR program is supported by a worldwide AF database (G021) that provides access to data on defects and resolution efforts. It also facilitates analysis of quality problems and preparation of management indicators. Customer DRs are included in the metrics and analysis requirements of *AFMCI 21-132*.

4.3. CONTRACT REVIEW. OO-ALC provides many different types of products and services which fall under three broad categories: Organic; Depot Maintenance Interservice Support Agreement (DMISA); and Contractual. A core function of OO-ALC is repair/overhaul of aeronautical systems and their components. The majority of this work is categorized as organic (internal to the Air Force). OO-ALC also accomplishes work for other branches of the military under the DMISA program. There are situations where the Center can bid on workload being placed on contract by the Air Force or another branch of the service. This section of the manual addresses the identification of customer requirements, contract review activities, process planning, changes, and record keeping for these three types of work.

4.3.1. Organic:

4.3.1.1. No formal written contract is used to manage organic work. The ALC works in concert with the operational commands to quantify and negotiate requirements for repair or modification. Since technical requirements are set by technical orders (TO) and engineering drawings, the term "requirement" means the quantity of products to be produced. A Material Requirements Review Board (MRRB) is convened at the ALC to review and establish the workload for the next fiscal year. Each of the OO-ALC product directorates have processes established for accomplishing repairs or modifications according to *AFMCR 66-61*; *AFMCR 66-62*; *AFMCI 21-110*; and *AFMCI 21-115*. For new items entering the repair system, Industrial Engineering Technicians (planners) develop work instructions in the form of WCDs. The workload is planned and managed through the use of these WCDs. The WCD is a certifiable sequence of work operations and inspection criteria used to complete manufacturing, repair, and functional testing of an item. It is based on technical data and kept current by the planners. Refer to paragraph 3.1, Quality Planning.

4.3.1.2. The Center maintains a Project Administration Office (PAO) for processing individual changes in the scope of organic work being performed on major end items such as aircraft. Permanent changes in

the scope of work performed on major end items are negotiated as part of the annual repair or programmed depot maintenance requirements. The Defense Contract Management Agency (DCMA) (formerly DCMC), provides services similar to those of the PAO on contract workloads, plus they accomplish direct oversight of the production processes and ensure all contractual requirements are met.

4.3.2. DMISA:

4.3.2.1. When OO-ALC is selected as the source of repair under the DMISA program, the Center Maintenance Interservice Support Officer (MISO) works with the Production Management Specialists in the appropriate product directorate that will be performing the work and other applicable support functions to initiate the production planning and agreement negotiation processes. The DMISA program in the Air Force is managed according to *AFI 21-133, Joint Maintenance Depot Program*. The DMISA document is negotiated in a meeting at the ALC with the other services customers. The following elements are typically addressed in the agreements and are treated as customer requirements:

- Type or kind of items being repaired.
- Quantity of items to be repaired.
- The Statement of Work.
- Applicable technical data.
- Safety procedures.
- Quality and inspection requirements.
- Special supply and delivery procedures.
- Source of component parts.
- Special tooling and test equipment.
- Status and production reports to the customer.

The production process is planned and managed using the processes and guidance mentioned above under organic workload. Problems or changes to the agreement are processed through the Center MISO.

4.3.2.2. The quantity and type of items to be repaired under the DMISA agreements are negotiated annually. Every fifth year, all elements of the agreement are reviewed and renegotiated as necessary.

4.3.2.3. Documents and records for the DMISA agreements are stored in the Center MISO office located in the Depot Maintenance Division (OO-ALC/LGP) and with the Production Management Specialist and Industrial Engineering Technicians in the product directorates.

4.3.3. Contract:

4.3.3.1. When the ALC competes for a workload being placed on contract, additional procedures for identifying and addressing customer's requirements apply. The Financial Comptroller Directorate (OO-ALC/FM) is the office of primary responsibility for the competition and proposal preparation processes. The process begins with a detailed review of the customer's requirements listed in the Request for Proposal (RFP) and an evaluation of the Center's ability to perform the work according to the customer's requirements. The Competition Team, consisting of functional experts from production and support processes, performs the evaluation using a locally developed cross-reference checklist. The checklist helps the team aggregate, analyze, and manage customer requirements during the preparation of a bid proposal. In most cases the evaluation includes, but is not limited to, the following elements:

- Drawing/specification clarity and current revision.
- Customer/government source inspection requirements.
- Statement of Requirements, Statement of Work, or Work Breakdown Structure.

- Special processes required.
- Special tooling and equipment requirements.

- Approval sources for materials and processes.
- Control of customer/government-furnished property.
- First production article inspection requirements.
- Defense Federal Acquisition Regulation requirements.

Bid proposals are reviewed by an independent team to verify that all elements of the RFP (customer requirements) have been addressed. The proposal must demonstrate that the Center has in position the resources and ability to meet the contract requirements, or provide a detailed plan as to how the contract will be met.

4.3.3.2. The post award phase begins upon award of a contract. Prior to acceptance, the contract is reviewed for changes or discrepancies requiring clarification. After accepting and signing the contract, the directorate that will be performing the work conducts a final review of the contract and related documents to ensure all requirements are addressed in the production processes, procedures, and WCDs. When called for in a contract, the Center will establish a special Project Administration Office (PAO). This office serves as a steward for the customer and provides a direct link to the Center Commander, tracking key customer concerns such as contractual performance, delivery, costs, etc. The Center's performance is measured against the contract line items in the RFP and proposal. The DCMA maintains an oversight role on contract workload. The Defense Contract Audit Agency (DCAA) also reviews the contracts awarded under competition for completeness and accuracy.

4.3.3.3. Changes in contract workload processes or scope are reviewed by both parties and processed by the Administrative Contracting Officer (ACO) as amendments to the contract. Records of contract review reside with the Production Administrative Officer and, as applicable, the Industrial Engineering Technicians.

4.4. Design Control. Limited design activity takes place at OO-ALC. That which does occur is primarily of two types:

4.4.1. The first is performed by contractors. Guidelines are provided in *DODD 5000.1, Defense Acquisition*. The Department of Defense (DoD) provides the Defense Acquisition Deskbook to sort through the guidelines and directives. The Air Force provides guidance and direction in *AFPD 63-1, Acquisition System*, and *AFI 63-101, Acquisition System*. Engineering data is acquired according to *AFI 21-402, Engineering Drawing System*.

4.4.2. The second type of design occurs organically. Engineering changes to Air Force drawings are accomplished according to *AFI 21-402*. Engineering data is managed according to *AFI 21-401, Engineering Data Storage, Distribution, and Control*. Any organization performing design activities will maintain internal procedures for controlling and verifying design requirements, design changes, and compliance with the above mentioned publications.

4.4.3. Configuration control during depot maintenance is maintained through strict adherence to maintenance instructions and tolerances provided in the applicable technical data. Configuration control of nonconforming product is detailed in paragraph 13 of this publication.

4.4.4. Organic first articles and prototyping are accomplished as prescribed in *AFMCI 64-110, First Article Management*. First article requirements are directed (or deemed not required) by the designated engineering authority. If no requirements are levied by the responsible engineering authority, quality verification requirements as described in this manual apply.

4.5. Document and Data Control. The types of documents and data used at OO-ALC that require control; and the publications, instructions, and TOs that provide the guidance and instructions for their control, are identified in the following paragraphs. Documents and data unique to a directorate (e.g. ICBM Utility Technical Manuals) are described in directorate quality plans.

4.5.1. USAF TOs:

4.5.1.1. The USAF TO system is described in *TO 00-5-1, AF Technical Order System*. The distribution, maintenance and control of TOs is prescribed in *TO 00-5-2, Technical Order Distribution System*.

4.5.1.2. The *TO 00-5* series describes and controls the distribution, maintenance, and improvement of the *TO System*. *TO 00-5-2* describes the distribution system; *TO 00-5-3, AF Technical Manual Acquisition Procedures*, describes the acquisition procedures; *TO 00-5-15, AF Time Compliance Technical Order System (TCTO)*, prescribes how TCTOs will be submitted and controlled; *TO 00-5-18, USAF Technical Order Numbering System*, explains the TO Numbering System; and *TO 00-5-19, Security Assistance Technical Order Program*, explains how the Security Assistance Technical Order Program (SATOP) is administered. SATOP supports the sales of military systems and commodities to foreign governments and international organizations under the Military Assistance Program. Additional requirements concerning the use of technical data within the Center is published in *AFMCI 21-110*.

4.5.1.3. Recommendations for improvements to formal TOs are reported by submitting an *AFTO Form 22, Technical Order Improvement Report and Reply*, according to instructions provided in *TO 00-5-1*.

4.5.1.4. In the product directorates (OO-ALC/LA, OO-ALC/LI, OO-ALC/LM, and OO-ALC/TI), *TO Distribution Office (TODO)* functions required by *TO 00-5-2* are contracted out to a civilian contractor. The contract is administered by the Contracting Operational Services Branch (OO-ALC/PKOS), with quality assurance oversight provided by quality assurance evaluators (QAE) assigned to the Support Branch (OO-ALC/TIPT). Refer to *Hill AFB Instruction 21-301, Technical Order System and Federal Supply Catalog* for internal procedures and responsibilities.

4.5.2. Engineering Data (aperture cards/drawings).

4.5.2.1. Aperture cards/drawings used on OO-ALC are controlled according to *AFI 21-401* and *AFI 21-402*.

4.5.2.2. Most aperture cards used in support of OO-ALC workloads are received by Technical and Industrial Engineering Data Production Section (OO-ALC/TIEDD) in the Engineering Data Service Center (EDSC) located in Building 1237, and then distributed to satellite repositories located in the product directorates where they are logged, maintained, reproduced into drawings, and issued to the production sections. There are unique situations, however, where aperture cards are received through centralized repositories other than Building 1237, (e.g., U.S. Navy C-130 workload.) In these situations, aperture cards are received and controlled by the respective product directorates according to *AFI 21-401* and *AFI 21-402*. The functions and responsibilities of the satellite repositories are contracted out to Aerospace Support Technologies as part of the same contract as the TODO functions.

4.5.2.3. Selected weapon systems engineering drawings are computerized in the Joint Engineering Data Management Information and Control System (JEDMICS) and are also available on-line. The production areas can directly access this system and print needed drawings.

4.5.3. WCDs. WCDs are prepared, approved, issued, and controlled by the Production/Engineering Planning sections within each of the product directorates according to *AFMCR 66-55, Mission, Design, and Series (MDS)/Project Workload Planning*, and *AFMCI 21-110*. For additional information concerning WCDs, refer to paragraph 4.9 of this manual.

4.5.3.1. Completed WCDs generated during work performed by the product directorates (see paragraph 4.16. of this manual) become an integral part of the inspection records of completed products. Completed documents are forwarded to the applicable scheduling functions.

4.5.4. Process Orders. Process Orders are used, where needed, to describe specific applications, procedures, techniques, methods, and shop practices to complement technical data, and are developed, coordinated, and controlled according to *AFMCI 21-110*.

4.5.5. Center Level Directives. Center level directives and directorate/division operating instructions (OI) are published according to *AFI 33-160, Volume 1, The Publications Management Program*. Publishing Management (75 CS/SCSP) has responsibility for reviewing, editing, and maintaining record copies of center directives. Customers may retrieve publications on the Internet (<http://hafb.hill.af.mil/scsweb/pdl/pubs.htm>)

4.5.6. Directorate Quality Plans. Quality Plans are developed to support workloads within the product directorates according to this manual and *AFMCI 21-115*. Quality plans are published, reviewed, and controlled internally within each of the product directorates according to *AFMAN 10-401*. OO-ALC/LGQ will review all product directorate quality plans annually as required by *Hill AFB Instruction 21-115*.

4.6. Purchasing:

4.6.1. General:

4.6.1.1. Parts and materials used in depot maintenance activities at OO-ALC are purchased through the Federal Supply System by various government agencies assigned management responsibility for the specific items, (e.g. General Services Administration (GSA), Defense Logistics Agency (DLA), other service branches, and OO-ALC/PK.

4.6.1.2. Procedures for processing PRs and Military Interdepartmental Purchase Request (MIPRs), and the authority for developing and awarding contracts are prescribed in the following documents:

- *FAR and Supplements*
- *AFMCI 23-102, Purchase Request (PR) Operations.*
- *AFMCPD 23-1, Sustainment Materiel Acquisition Policy.*

4.6.2. Evaluation of Supplier. Evaluation and selection of acceptable and approved suppliers is conducted according to the solicitation provisions and Federal Acquisition Regulation (FAR) supplement. Some of the evaluation criteria are:

- Demonstrated past performance.

- Supplier's ability to meet contractual requirements.
- Evaluations of product samples through First Article Inspections, Initial Product Evaluations, and the Conformance Verification Program.

4.6.3. Subcontracting workload assigned to the product directorates is accomplished as described in *AFMCI 21-113, Contract Maintenance Programs for Depot Maintenance Business Area (DMBA)*. This publication provides requirements to obtain and manage the contracts, preparation of documents, selecting responsible contractors, and provide adequate pre-award and post-award support to the contractors selected. Applicable references to FAR requirements for the Procuring Contracting Officer (PCO) and (ACO) are also provided.

4.6.4. Maintenance contractors working within the product directorates to supplement manning/skill shortages are PAC certified to perform selected tasks. The first-level supervisor for the dock/crew/shop assigned, provides quality oversight of these individuals. Contractor personnel are subject to all quality assurance surveillance and evaluations as detailed in *Hill AFB Instruction 21-115* and Product Directorate Quality Plans or supporting OIs.

4.6.5. Purchasing Data. Several directorates, including OO-ALC/PK, share responsibility for processing Purchase Requests when purchasing material and parts. Procedures for initiation, control, and processing of purchases are contained in the *FAR* and *supplements*, *AFMCI 23-102*, *AFMCPD 23-1*, *AFMCM 70-2*.

4.6.5. Verification of Purchased Product.

4.6.5.1. Most parts and materials used in support of workloads at OO-ALC are procured from private contractors and are inspected and accepted on behalf of the U.S. Government by QA Representatives assigned to DCMA.

4.6.5.2. Parts and materials destined for OO-ALC workloads are received at OO-ALC by Product Receipt & Evaluation (DDOU/E Hill) in Building 849, and are inspected again using the guidance and procedures in the Supply Operations Policy and Procedure Memorandum 92-07.

4.6.5.3. OO-ALC also maintains a Conformance Verification Program (CVP) to supplement other methods of verifying purchased products. Monthly samples (both random and selective) of incoming parts are selected, inspected, and/or tested to determine conformance to contract specifications. CVP evaluates only parts managed and procured by OO-ALC and is restricted to parts without proprietary data.

4.6.5.4. Once parts and materials are received in the product directorates, they are visually inspected prior to installation on an end item. They are also subjected to form, fit, and function verification during installation and operational testing after installation according to applicable technical data.

4.6.5.5. Parts and materials that are found defective are reported according to *TO 00-35D-54*. Shipping damage is reported IAW *AFJMAN 23-215, Reporting of Supply Discrepancies*.

4.7. Control of Customer-Supplied Product.

4.7.1. Customer-supplied products for aircraft workloads can consist of parts/components, materials, or modification kits supplied from another service or customer on a contract or DMISA workload. If these items are required by the workload/contract agreement to be segregated from Air Force stock, procedures will be developed/revised (as necessary) to ensure the specified requirements are met.

4.7.2. OO-ALC customers may provide products on designated workloads such as field-level TCTO kits to be installed during depot maintenance. This type of requirement could be part of the workload agreement or requested by the individual units using *AFTO Form 103, Aircraft/Missile Condition Data*. The procedures defining these requirements are outlined in applicable product directorate quality plans or supporting OIs.

4.7.3. For the purpose of contract workloads, workload components are considered customer-supplied products. They will be safeguarded from damage, loss, or deterioration per paragraph 15 of this regulation. Non-conformities discovered during the maintenance process or those organically caused will be processed per paragraph 13 of this manual. Any loss of contract workload components meeting the criteria specified in *AFMAN 23-220, Reports of Survey for AF Property*, will be processed accordingly. The DCMA is the customer's representative and is notified of all loss or damage through the Maintenance Work Request (MWR) process.

4.8. Product Identification and Traceability. The identification of all products, in-process components, and raw materials is maintained throughout the repair process through the use of storage location, tags/labels, condition tags, routers, AFTO series forms/records, and WCDs. These items are used to keep track of each serialized asset and report the final configuration of the repaired item. The work instructions clearly document each step of the process and record the identification of components and materials used where traceability is a specified requirement. Refer to the product directorates quality plans or supporting OIs for specific workload requirements.

4.9. Process Control. The policies, programs, directives, technical data, and methods establishing process control within OO-ALC are described in detail in this manual. The adaptation of the Center Quality System elements articulated in paragraphs 4.1 through 4.21 of this manual establish or support the control of the Center production processes. Some of the methods used to establish process control are described below.

4.9.1. Technical data. Technical data provides mandatory step-by-step maintenance instructions for the repair, overhaul, modification, and servicing for all depot products. The compliance to technical data not only assures product conformance, it ensure configuration control is maintained

4.9.2. WCDs:

4.9.2.1. WCDs are used in the product directorates to provide for work control, identification, PAC inspection codes, routing of items, quality verification inspection requirements, and a record of the work and inspections accomplished. Instructions for the preparation, coordination, change, and control of WCDs is provided in *AFMCR 66-55* and *AFMCI 21-110*.

4.9.2.2. WCDs are prepared, coordinated, approved, and controlled in the product directorates by the Production/Engineering Planning functions. WCDs are an extraction and documentation of sequence steps outlining the processing of an item and indicates work completion and certification.

4.9.2.3. The MDS/Project Workload Planning System (G037E), Periodic Depot Maintenance Scheduling System (GO97), and the Inventory Tracking System (ITS) are computerized maintenance systems used by the Shop Service Center (SSC) or Weapons System Service Center (WSSC) to plan, schedule, and control the modification and repair of aircraft and other type workloads.

4.9.3. Precision measurement equipment (PME) used in the various processes performed within the product directorates are calibrated and controlled according to paragraph 4.11 of this manual.

4.9.4. The PAC Program ensures that technicians performing processes are qualified and certified to perform tasks according to *AFMCI 21-108*.

4.9.5. The Software Capability Maturity Model (SW-CMM) is a framework that describes the key elements of an effective software process. It provides software organizations with guidance on how to gain control of their process for developing and maintaining software and how to evolve toward a culture of software engineering and management excellence. Adherence to these standards ensures that software engineering activities and software products are adequately planned, tracked, measured, and improved.

4.9.6. Equipment/systems embedded in the production facilities – These support equipment/systems are permanently installed in the production areas and provide such things as environmental control, hydraulic power, avionics cooling air, fuel system refuel/defuel/purge, environmental control for painting, and bead blasting, etc. The proper upkeep and preventative maintenance of these systems is critical. Either organic or contractor resources are responsible to properly maintain these systems. For specific responsibilities, refer to the product directorates quality plan or supporting OIs.

4.9.7. Powered and non-powered aircraft ground support equipment (AGE) – As with the embedded support systems, the improper care and preventative maintenance of powered and non-powered AGE would have an adverse effect on product quality. A private contractor maintains all AGE at this Center in accordance with contract, technical data, and other applicable Air Force directives requirements.

4.9.8. Facilities – The facilities used in the production areas must be properly maintained to create an environment conducive to high quality workmanship. The facility functions within the product directorates are responsible to ensure facilities meet all workload, safety, and personnel requirements.

4.10. Inspection and Testing:

4.10.1. General. The inspection program employed by industrial processes throughout OO-ALC is designed to ensure quality is built into the product. Maintenance personnel certified under the PAC program perform inspections and tests of products. Only employees who have successfully completed all training and certification requirements mandated by AFMC are allowed to certify product conformance. The PAC program not only requires each certified employee to inspect and certify their own work, but also requires an additional PAC certified employee to re-inspect and certify selected tasks identified by a production planning team as requiring secondary PAC certification. The types of inspections utilized during the various phases of production are described in the following paragraphs.

4.10.2. Examination and Inventory (E&I) – E&I inspectors are PAC certified technicians assigned to assess the incoming condition of products to determine incoming condition, project related and unpredictable/over and above (O&A) work requirements. The E&I inspection requirements are developed to satisfy specific workload requirements.

4.10.3. Production In-Process - As each task is completed, the PAC/SSQ (Special Skills Qualification) certified mechanic verifies conformance to all technical requirements. Those items identified on the WCD as having critical characteristics/safety of flight require a second PAC certification (secondary PAC). PAC program procedures, certification, inspection codes, and other program requirements are outlined in *AFMCI 21-108* and *AFMCI 21-110*.

4.10.4. Closeout (Operational/Visual) - Operational tests to verify the proper operation and integrity of the systems or components are performed on all systems modified, repaired, or disturbed. Areas are also re-inspected against technical and WCD requirements as the areas are closed out (completed). These requirements are driven by the WCDs and are performed to technical data specifications. These WCDs are part of the Production Planning Team process.

4.10.5. Aircraft Post-Production - Post-production inspections are performed to verify technical compliance, workmanship, overall aircraft quality, and to identify opportunities for process improvement. Details of this assessment program are detailed in the OO-ALC/LAO Quality Plans and supporting OIs.

4.10.6. Aircraft Flight Prep - The inspections performed by Prep-for-Flight (C-130 Prep for Flight/Paint Section (OO-ALC/LAOCAF), A-10 Production Section (OO-ALC/LAOHA) and F-16 Prep for Flight/Paint Section (OO-ALC/LAOFAF) are dependent on the scope of the production work package, but normally consist of fuel, engine, and avionics systems operational checks to ensure flight worthiness and systems integrity. Pre-flight/post-flight inspections are performed during the Functional Check Flight (FCF) phase. The inspection requirements are part of the planning process, and documented on WCDs and the aircraft *AFTO 781 series forms*. Reference the Operations Division (OO-ALC/LAO) Quality Plan and supporting OIs for specific details.

4.10.7. Management Directed - OO-ALC Directorate, division, and Fixer Chiefs periodically direct special inspections as an interim measure in reaction to customer feedback or other indicators of a quality/reliability problem. The inspection requirements are documented on WCDs and/or the aircraft *AFTO 781 series forms*.

4.10.8. Customer, Command, Numbered Air Force, or System Program Director (SPD) one-time inspections - Immediate or urgent action inspections are performed on affected aircraft, as directed/requested. The issuing authority provides inspection requirements. The workload supportability sections accomplish all required planning functions and translate the inspection requirements into WCDs.

4.10.9. Receiving - Parts and materials are visually inspected and operationally checked (as required by technical data) for the proper form, fit, and function by the PAC-certified mechanics at the time of use. Outgoing Discrepancy Reports are processed per *TO 00-35D-54* for any deficiencies discovered. Shipping damage is reported per *AFJMAN 23-215*.

4.10.10. In-Process Inspection. During the in-process phase of production, all inspections and tests required by applicable TOs and/or work packages are performed according to WCDs as per paragraph 4.9. of this manual. The WCDs provide the criteria for determining the acceptability of the product.

4.10.11. Final Inspection and Testing. Final inspection and functional testing of end items are performed according to WCDs based on requirements contained in applicable TOs. In addition to any physical inspection and testing required, the production, scheduling, and planning functions within the respective product directorates will convene a Maintenance Review Team (MRT) according to *AFMCR 66-55*. The MRT verifies that all requirements of the work package (planned and unplanned) have been completed, as negotiated, prior to release of the end item.

4.10.12. Surveillance and evaluations conducted within OO-ALC by the product directorate quality organizations are as follows (reference *Hill AFB Instruction 21-115* for details):

*4.10.12.1. Quality Verification Inspections (QVI):

4.10.12.1.1. A QVI is the technique that is used to assess and evaluate the health and well-being of core production processes and products produced by OO-ALC.

4.10.12.1.2. A cadre of core production QVI candidates are identified, based on the Production Planning Team process, new workload requirements, customer reported defect information, or by recommendations of product directorate's management. QVIs will be performed on a regular basis.

4.10.12.2. Core and other inspections: Core inspections are maintenance disciplines common to all AFMC Depot Maintenance operations that *AFMCI 21-115* mandates continuous evaluation for compliance to established Air Force, AFMC, Environmental Protection Act (EPA), and local publication requirements. Other inspections are those not listed in *AFMCI 21-115* that are directed by product directorate's management.

4.10.12.3. Task evaluations: Annual Task Evaluations (TE) are performed on all PAC certified personnel within OO-ALC. TEs assess the effectiveness of the PAC/SSQ program. The TEs will determine worker knowledge and competence required by the position, ability to interpret and comply with technical data and WCD instructions, and ability to demonstrate their knowledge and compliance to the other maintenance and safety disciplines associated with their position.

4.10.12.4. Isolated violations: An observed event or condition with safety implications or technical violations not related to a planned inspection/assessment that may be considered unsafe, not in accordance with established procedures, and/or unfit to operate. An isolated violation consists of any condition not in compliance with established standards and will be corrected immediately.

4.11. Control of Inspection, Measuring, and Test Equipment:

4.11.1. General. The PMEL Branch (OO-ALC/TIPL) performs repair and calibration of Test, Measurement, and Diagnostic Equipment (TMDE) used at Hill AFB and by customers worldwide. TMDE comprises the precision tools and test equipment used to measure, calibrate, gauge, test, inspect, diagnose, or otherwise examine material, supplies, and equipment to ensure compliance with specifications established in engineering drawings, TO requirements, military standards, or other specifications.

4.11.2. Control Procedures:

4.11.2.1. The PMEL Branch at OO-ALC is certified as a Type IIA PMEL. This certification ensures that measurement standards and processes for the repair and calibration of TMDE meet the requirements of the Air Force Metrology and Calibration Program (AFMETCALP), and are traceable to the National Institute of Standards and Technology (NIST). Inspection/verification of laboratory processes, records, and quality program are subject to review by AFMETCAL and other government agencies through on-site inspections at scheduled or unscheduled intervals.

4.11.2.2. To ensure the integrity of AFMETCALP and measurement traceability to NIST, Quality Assurance Specialists (QAS) for the organic PMEL and Quality Assurance Evaluator (QAE) for the contract PMEL are assigned to and oversee quality functions performed by the PMEL. All working standards, which are used for calibration or baseline measurement and control, are quality verified

through random sample process reviews of equipment prior to release for use. QASs and QAEs perform actual hands-on verifications to ensure compliance with procedures, and proper documentation. Certified test, measurement, and diagnostic equipment (TMDE) are labeled with an appropriate validation sticker or tag. This system provides verifiable TMDE accuracy for equipment owners.

4.11.2.3. Direction for PMEL quality process evaluations are detailed in *TO 00-20-14, Air Force Metrology and Calibration Program*. The calibration and certification of measuring and test equipment is controlled according to *AFI 21-113, Air Force Metrology and Calibration (AFMETCAL) Program*; *AFMCM 66-315, Test Measurement and Diagnostic Equipment and Scheduling G0041 Users Manual*; PMEL Customer Inventory System (PCIS) Users Manual; or equivalent commercial standards. The Facility Equipment Maintenance System (FEMS) maintains a centralized inventory record of all PME/TMDE requiring periodic calibration and certification. Precedence for TMDE Calibration and certification procedures is outlined in *TO 00-20-14, Air Force Metrology and Calibration Program*.

4.11.2.4. Calibration and measurement requirements for the F-16 weapon system and associated support equipment, including fixtures, are contained in *TO 1F-16A-37, USAF Calibration and Measurement Summary for F-16 Falcon Weapon System*.

4.11.3. It is the responsibility of the product directorates production tool cribs to ensure that only tools/equipment with current calibrations and no visible deficiencies are issued. It is also the responsibility of the user to ensure that tools/equipment are serviceable and calibrations are current before each use. If an incident occurs (such as dropping) that could void the calibration, the user is responsible to identify the problem to the PME monitors, so that it can be routed to PMEL.

4.12. Inspection and Test Status:

4.12.1. The method within the product directorates for indicating that products produced have been inspected/tested and accepted, or have not yet been inspected, is accomplished through the use of WCDs as described in paragraph 4.9 of this manual, or on some products, the use of AFTO forms according to the 00-20-series TOs. When the WCD inspection code for an item is stamped by a PAC qualified/certified employee, or two certified employees when the inspection codes requires a second certification, the item has been inspected and accepted. When a WCD has not been stamped off, it indicates the item has yet to be inspected or accepted. Tasks or operations designated for QVIs will require the "Q" code be certified by a QAS.

4.12.2. Refer to the applicable product directorate and/or division work specific quality plans for details concerning the inspection and test status of products produced.

4.13. Control of Nonconforming Product:

4.13.1. Defective parts received through the AF Supply System are reported and identified according to *TO 00-35D-54* and *AFMCI 21-130, Equipment Maintenance Control*. Shipping damage is reported IAW *AFJMAN 23-215*. Defective parts received through the US Navy Supply System are reported according to OPNAVINST 4790.2E.

4.13.2. Nonconformities caused by maintenance actions that can be reworked to technical specifications will be accomplished in accordance with *AFMCI 21-110*. The WCD generated for the nonconformity maintains the required identity and control of the rework until its completion. Rework will be accomplished in accordance with the procedures detailed in *AFMCI 21-110*.

4.13.3. Nonconformities caused by maintenance actions that cannot be reworked to technical specifications will require engineering disposition. *AFMC Form 202, Nonconforming Technical Assistance Request & Reply*, will be submitted and processed IAW to *AFMCMAN 21-1, Air Force Materiel Command Technical Order System Procedures*. The WCD and *AFMC Form 202* generated for the nonconformity maintains the required identity and control of the rework until its completion.

4.13.4. All unpredictable and O&A nonconformities discovered during the performance or workload requirements will be accomplished IAW *AFMCI 21-110*. The WCD maintains control of the nonconformity until it's corrected.

4.14. Corrective and Preventative Actions: All levels of OO-ALC management recognize the importance of sound corrective/preventative actions to improve the processes and eliminate the root cause of quality deficiencies. All levels of management are responsible to initiate positive corrective/preventative actions in their functional areas of responsibilities and to follow up those actions to ensure the desired results are achieved. The following is a synopsis of the programs and assessment indicators that generate corrective/preventative actions within OO-ALC:

4.14.1. The monthly product directorate Team Reviews and QMB briefings roll up the cost, schedule, and quality indicators to the macro level. These internal reviews of Quality Performance Indicators (QPI) gives the senior managers insight into areas needing corrective/preventative action.

4.14.2. QPIs for the major processes in the product directorates give visible evidence of those processes requiring corrective/preventative action. Follow-up to ascertain if the desired results have been achieved is readily apparent by monitoring the QPI that identified the problem or by performing process surveillance or evaluations as detailed in *Hill AFB Instruction 21-115*.

4.14.3. Corrective and preventative action requirements for external defects are detailed in TO 00-35D-54 and the product directorate quality plans or supporting OIs.

4.14.4. Quality surveillance and evaluations conducted by OO-ALC/LAMQ are autonomous reviews of production processes. The program, procedures, and corrective and preventive requirements are detailed in *Hill AFB Instruction 21-115*.

4.14.5. Corrective/preventative actions regarding PAC-certified mechanics, including de-certification/re-certification actions, are contained in *AFMCI 21-108*.

4.14.6. Corrective/preventative actions for organically caused nonconformities are as described in paragraph 4.13 of this manual.

4.14.7. Corrective Action Requests (CAR) are used by the on-site DCMAC representatives for contractual or product nonconformances. These nonconformances can be the result of DCMA product audits, inspections or process evaluations. CARs are issued in either a verbal or written form. The corrective actions required to correct a CAR can consist of the following steps: correct the defect (always required); screen the product for defects; determine the special or common cause of the defect and eliminate the cause; take action to prevent similar defects until corrective action is in place; determine if the corrective action was effective. Refer to *Hill AFB Instruction 21-115* and the product directorate quality plan or supporting OIs for CAR processing requirements

4.15. Handling, Storage, Packaging, Preservation, and Delivery. Product directorates will establish and maintain documented procedures for handling, storage, packaging, preservation, and delivery of products while under directorate control. The handling of materials requires proper planning, control, FOD protection, Electrostatic Discharge (ESD) prevention, and component identification, and a documented system for incoming materials, materials in process, and finished products. Material handling extends to the delivery of the product and to the time the item is put into use. Although these are primarily DLA functions at OO-ALC, the respective product directorates are responsible for their portion of the process; i.e. while materials and products are stored or worked on within their directorates. The method of handling and storage should provide for proper and adequate equipment, materials, and facilities to prevent damage as a result of conditions such as vibration, shock, abrasion, corrosion, temperature, or any other related adverse factors. Appropriate storage containers and areas should be designated to prevent damage or deterioration to the product pending use or delivery. Receipt and dispatch from such areas should be stipulated and items in storage should be checked periodically for possible deterioration and damage. Labeling and marking of items should be legible, durable, and in accordance with the required specifications.

4.15.1. Procedures for special handling are contained in *AFMCI 24-201, AFMC Packaging and Materials Handling*. This includes the use of crates, boxes, containers, transportation vehicles, and other facilities of material handling.

4.15.2. Electronic equipment and ESD sensitive items are handled according to *TO 00-25-234, General Shop Practice Requirements for the Repair, Maintenance, and Test of the Electrical Equipment*; hazardous material according to *AFJI 24-210, Packaging of Hazardous Material*; explosive material according to *AFMAN 91-201, Explosive Safety Standards*; and shelf-life items according to *AFMAN 23-110 Volume 7 Part 13, The Air Force Shelf Life Program*.

4.15.3. Items that are subject to corrosion, oxidation, or deterioration should be cleansed and preserved to ensure maximum life cycle function. To the extent that it is contractually specified, this protection should be extended to include delivery to destination. Condition of the product should be assessed at appropriate intervals.

4.15.4. Shelf-Life Material/Items – Until time of issue, OO-ALC/LGS personnel and the DLA are responsible to comply with all the requirements of *TO 00-20K-1, Shelf-life Material*. Once issued to production personnel, they assume that responsibility. All personnel receiving/using shelf life material/items will comply with the applicable requirements of *TO 00-20K-1*.

4.16. Control of Quality Records. Guidelines for records management are contained in *AFI 37-138, Records Disposition--Procedures and Responsibilities* and *AFMAN 37-139, Records Disposition Schedule*. Specific instructions given in a governing directive concerning control of specific quality records takes precedence over general instructions. Refer to the product directorate quality plans or supporting OIs for additional details.

4.17. Internal Quality Audits and Reviews.

4.17.1. The product directorate quality organizations accomplish internal surveillance, evaluations, and Requests for Quality Assistance (RQA) in accordance with *AFMCI 21-115, Hill AFB Instruction 21-115*, and the product directorate quality plans or supporting OIs. The different type of surveillance and evaluations conducted has been previously documented in paragraph 4.10.13 of this manual.

4.17.2. Annual MSEP/UCI reviews are also conducted at the Center-level. An overview of these programs has also been previously documented in paragraph 4.2 of this manual.

4.17.3. An annual PAC and training program review is conducted by the Center PAC and Training Working Group in accordance with *AFMCI 21-108*. This review must include: determining adequacy of local directives, sampling of training and PAC records in all production organizations, cross-checking certification actions on WCDs against the employees certification records, sampling of SSQ training requirements, qualifications, and documentation procedures, and analyzing training and PAC metrics to determine trends for process improvement.

4.18. Training. Each directorate is responsible for identifying employee occupational training needs and ensuring they receive the training required to perform activities that affect product quality. The responsibility for providing training at OO-ALC is shared by Education and Training Flight (75 MSS/DPE) and Training Division (OO-ALC/TIU). 75 MSS/DPE manages the Distance Learning Center, directly supervises the Employee Development and Operations Section (75 MSS/DPEO) and Education Services and Military Training (75 MSS/DPEE), and provides assistance to OO-ALC/TIU.

4.18.1. 75 MSS/DPEO provides guidance and assistance in meeting base training needs. 75 MSS/DPEO assists managers, supervisors, organizational training monitors, and employees in planning, developing, and managing base training programs. 75 MSS/DPEO is responsible for implementing the requirements of *AFI 36-401, Employee Training and Development*. This responsibility is accomplished by providing customers guidance in determining needs, validating requirements, obtaining resources, and evaluating, documenting, and reporting training. To further assist customers, 75 MSS/DPEO publishes the base installation training guide, *A Handbook for Managers and Supervisors of Civilian Employees*, the annual Installation Training Plan, and the Civilian Training and Education Financial Plan.

4.18.2. 75 MSS/DPEE provides educational opportunities to meet the immediate and long-range needs of the Air Force and the nation. The office also fosters individual professional development and helps uniformed service members obtain the skills and knowledge required to perform effectively in their duty assignments. 75 MSS/DPEE offers counseling and assistance with off-duty education programs for military members, and administers various combinations of formal training, on-the-job training, and professional military education.

4.18.3. OO-ALC/TIU provides workforce functional training in technical, industrial, logistics, and small computer skills. OO-ALC/TIU also assists supervisors and organization training monitors to plan, develop, and manage functional training requirements. Training technicians in OO-ALC/TIU consolidate training requirements, schedule classes and equipment, publish a monthly training schedule, determine allocations by priority of slots requested from each organization based on resources available, and track and report course completions and no-shows. *AFI 36-401* provides the basic guidance for determining needs, validating requirements, financial planning, obtaining resources, and also evaluating, documenting, and reporting training. *AFMCI 36-201, Education and Training Process Guide*, translates identified needs into specific training requirements by directing four major activities: identification of individual training requirements, center requirements consolidation, command requirements analysis and consolidation, and out of cycle requests. Accurate training forecasts, needs identified, and prioritization of training ensure essential and timely training is provided to the work force.

4.18.3.1. Core Automated Maintenance System (CAMS). CAMS was developed and designed to facilitate all activities engaged in maintenance of aircraft, missiles, munitions, communications, and aerospace ground equipment. The training system components include information on required training courses, inspection and certification courses, special qualifications, on-the-job-training (OJT), current training status, due and completed dates, employee training history, and automated job qualification standards. The Education, Training Management System (ETMS) will replace CAMS in the near future.

4.18.3.2. PAC - The objective of the PAC and maintenance training program is to ensure maintenance support and production personnel are technically qualified and proficient to perform assigned tasks. The following forums, functions, and assessments are established within the Center to ensure this objective is attained (refer to HAFB Supplement1 to *AFMCI 21-108*, *Hill AFB Instruction 21-115*, and product directorate quality plans and supporting OIs for details).

4.18.3.2.1. Center Maintenance Training and PAC Council. The Center QMB also serves as the Center Maintenance Training and PAC Council and is chaired by the Center OO-ALC/Commander, Vice Commander, or Executive Director. The Product Directors, the AFGE Local President or designee, and other senior leaders deemed appropriate, are members. The charter of this forum is to:

4.18.3.2.1.1. Ensure the Maintenance Training and PAC program is effectively implemented.

4.18.3.2. 1.2. Ensure an effective local implementation directive is published and kept current.

4.18.3.2. 1.3. Ensure as a minimum, an annual assessment of the Maintenance Training and PAC program is performed and all problems identified are corrected.

4.18.3.2. 1.4. Reviews annual training and PAC assessment and takes corrective actions as necessary.

4.18.3.2. 1.5. Review quarterly training and PAC metrics and take appropriate management actions.

4.18.3.3. Center PAC Program Manager. The PAC Program Manager works with the product directorates/divisions Training and PAC Managers to form the center Maintenance Training PAC working group.

4.18.3.3.1. Assists all product directorates with Maintenance Training and PAC program implementation.

4.18.3.3.2. Schedules the annual Maintenance Training and PAC program review and organizes the Maintenance Training PAC working group to support this effort.

4.18.3.4. Center Maintenance Training Manager. The Center Maintenance Training Manager works in concert with the Center PAC Program Manager.

4.18.3.4.1. Represents the maintenance training function at the Center Maintenance Training and PAC Working Group.

4.18.3.4.2. Assists all product directorates/divisions with Maintenance Training program requirements and implementation.

4.18.3.4.3. Participates in the annual Maintenance Training and PAC program review.

4.18.3.4.4. Identifies all standard center and lead center course development requirements to the center education and training function.

4.18.3.5. Center Maintenance Training and PAC Working Group.

4.18.3.5.1. Composed of all product directorate/division Maintenance Training Managers and PAC Program Managers, a representative of the AFGE Local, and chaired by the center PAC Program Managers.

4.18.3.5.2. Advises the center Maintenance Training and PAC council on all Maintenance Training and PAC program issues.

4.18.3.5.3. Assists the center PAC Program Manager in organizing, performing, and reporting results of the annual Maintenance Training and PAC program review.

4.18.3.5.4. Assigns OPRs for specific recurring training requirements (RTR) and SSQs and determine if standardized training can be applied.

4.18.3.5.5. Performs Annual reviews of all local RTR and SSQs to ensure adequacy of requirements and training.

4.18.3.6. Programs and methods to assess the overall effectiveness of the PAC and Training Program, as it relates to proficiency of the workforce, at the product directorate-level are described in paragraphs 4.2.4 and 4.10.12.3.

4.19. Servicing:

4.19.1. Servicing or service-after-delivery refers to the process available to customers should product/service deficiencies or failures occur. OO-ALC organizations are committed to promoting trust and confidence in their products/services and in satisfying customer requirements. The formal approach and innovative techniques to foster open communications and ensure our external customers receive prompt and efficient after-delivery service are discussed in the following paragraphs:

4.19.1.1. Deficiency Reports. The reporting systems governing the processing and management of defects are documented in *TO 00-35D-54*. This TO interacts with DO86 Web Site, Logistics/Maintenance Engineering Management Assignments, *AFMCI 21-110*, *AFMCR 66-61*, *AFMCI 21-130*, *AFI 99-101*, *Developmental Test and Evaluation*, and *AFI 99-102*, *Operational Test and Evaluation*. These directives contain the guidelines by which the customer is able to initiate service after sales, i.e., report problems, receive replacement assets or have the item repaired at no cost, and/or receive an explanation on what was done to correct and prevent the recurrence of the problem.

4.19.1.2. Dedicated Customer Relations Activities. Frequent communication with customers is essential for monitoring good quality and providing service after sales. OO-ALC has established dedicated positions for major workloads for this purpose, e.g. OO-ALC/LA for aircraft modification and maintenance and OO-ALC/LM for missile maintenance. The functions of these positions are to research and resolve customer-related product defects, participate in site visits, receive first-hand concerns via telephone, and maintain telecommunications with units throughout their initial inspection of delivered products. In addition to these specific functions, any individual dealing with customers as part of their

normal activities, e.g., the fixers, material planners, inventory managers, equipment specialists, quality specialists, etc., are also responsible for providing necessary technical support and resolving customer concerns and issues.

4.19.1.3. Other opportunities for customers to voice their concerns and identify future requirements to enhance existing products/services include conferences, periodic surveys, reviews, integrated product teams, Depot Repair Enhancement Program (DREP) and Depot Maintenance for Aircraft Repair (DMMAR) teams, and other forums. Examples of these forums and customer interface meetings are the Annual Software Technology Conference, weapon systems program directors worldwide and in-country reviews, technical coordination groups, and Product Improvement Working Groups. The latter is conducted according to *AFI 21-118, Improving Aerospace Equipment Reliability and Maintainability*.

4.19.2. OO-ALC/LAO provides maintenance assistance (service) to customers as part of the Depot Maintenance Assistance Program (*TO 00-25-107, Maintenance Assistance*). Listed below are two different types of services provided:

4.19.2.1. Organizational and Intermediate (O&I) Level - O&I level tasks which are beyond the maintaining commands capability to accomplish.

4.19.2.2. Unprogrammed Depot Level Maintenance - Depot level maintenance that was not forecasted, such as catastrophic damage or abnormal wear and tear of aircraft/equipment.

4.19.3. After delivery, service instructions/information associated with product assembly and installation, OIs, and illustrated parts lists are provided to the users according to *TO 00-5-1*.

4.20. Statistical Techniques:

4.20.1. OO-ALC has established indicators for measuring the health and well being of key programs and processes. These QPIs and quality metrics measure performance associated with cost, quality, schedule, and customer support for products and services provided by this Center. QPIs are used at all levels within the directorates to manage their operations and help improve processes. The QPIs align to our Center and AFMC goals and objectives as outlined in the OO-ALC Strategic Plan. Major workloads transitioned to this center or acquired through the competitive bid process will have meaningful quality metrics developed to monitor the processes and ensure success. QPIs are developed according to *AFMCI 21-132* and the product directorates quality plans or supporting OIs and are reviewed monthly within the product directorates, quarterly at Center-level, and annually by AFMC/LGP.

4.20.2. As a minimum, the QA metrics generated by the product directorates will be those mandated in *AFMCI 21-132, Attachment 1*. Each product directorate will review the applicable metrics monthly. The forum for this review, required metrics, and analysis requirements will be documented in the product directorates QAP or supporting OI.

4.20.3. The product directorate QA metrics will be reviewed quarterly during the OO-ALC QMB. The purpose of these quarterly briefings are to keep Center senior-level managers informed of the health and well being of the QA program, cross-feed information to all product directorates, evaluate program performance, and make program improvements.

4.20.4. In addition, statistical process control and other statistical analysis techniques are employed, as needed, in areas where critical industrial special processes and/or software development and modification

are accomplished. Where appropriate, guidance for the application of statistical techniques should be documented in product directorates workload specific quality plans or supporting OIs.

4.21. Economics of Quality. The identification and resolution of costly and inefficient maintenance operations is accomplished by following the minimum data collection requirements for cost of labor and material for rework, scrap, and spoilage contained in *AFMCI 21-110* and *AFMCR 66-61*. Quality cost data should be maintained and used, as appropriate, as a management metric of the quality program to identify the cost of both the correction and prevention of nonconforming items. Procedures for collecting and analyzing this data should be documented in product directorates workload specific quality plans or supporting OIs.

AUDREY L WOLFF, Lt Col, USAF
Deputy Director of Logistics Management

Attachment
Glossary of References and Supporting Information

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFI 21-113, Air Force Metrology and Calibration (AFMETCAL) Program
AFI 21-118, Improving Aerospace Equipment Reliability and Maintainability
AFI 21-133, Logistics Depot Maintenance Interservice
AFI 21-401, Engineering Data Storage, Distribution, and Control
AFI 21-402, Engineering Drawing System
AFI 36-401, Employee Training and Development
AFI 37-138, Records Disposition – Procedures and Responsibilities
AFI 37-160, Volume 1, The Air Force Publications and Forms Management Programs
AFI 63-101, Acquisition System
AFI 99-101, Developmental Test and Evaluation
AFI 99-102, Operational Test and Evaluation
AFJI 24-210, Packaging of Hazardous Material
AFJMAN 23-215, Reporting of Item Packaging Discrepancies
AFM 66-279, Volume 1, Core Automated Maintenance System (CAMS)
AFM 91-201, Explosive Safety Standards
AFMAN 10-401, Operation Plan and Concept Plan Development
AFMAN 23-110, Volume 7, Part 13, The Air Force Shelf Life Program
AFMAN 23-220, Reports of Survey for AF Property
AFMAN 37-139, Records Disposition Schedule
AFMC 90-202, Commend Level Inspector General Activities
AFMCI 21-101, Depot Maintenance Activation Planning
AFMCI 21-108, Maintenance Training and Production Acceptance Certification
AFMCI 21-110, Use of Technical Data in Organic Depot Maintenance
AFMCI 21-113, Contract Maintenance Programs for Depot Maintenance Programs
AFMCI 21-115, Depot Maintenance Quality Assurance (QA)
AFMCI 21-130, Equipment Maintenance Material Control
AFMCI 21-132, Depot Maintenance Technical Compliance Review Procedures
AFMCI 21-301, Air Force Materiel Command Technical Order System Implementing Policies
AFMCI 23-102, Purchase Request (PR) Operations
AFMCI 24-201, AFMC Packaging and Materials Handling Policies and Procedures
AFMCI 36-201, Education and Training Process Guide
AFMCI 64-110, First Article Management
AFMCM 66-315, Test, Measurement, and Diagnostic Equipment Scheduling, G0041 Users Manual
AFMCMAN 21-1, Air Force Materiel Command Technical Order System Procedures
AFMCPD 23-1, Sustainment Materiel Acquisition Policy
AFMCR 66-55, Mission, Design, and Series (MDS)/Project Workload Planning
AFMCR 66-61, Operational Planning
AFMCR 66-62, Operational Scheduling
AFPD 63-1, Acquisition System
HAFBI 21-115, OO-ALC Depot Maintenance and Quality Assurance (QA)
HAFBI 21-301, Technical Order System and Federal Supply Catalog
ISO 9001, International Standard for Quality Assurance

TO 00-20-14, Air Force Metrology and Calibration Program
 TO 00-20-234, General Shop Practice Requirements for Electrical Equipment
 TO 00-20K-1, Shelf-life Material
 TO 00-35D-54, USAF Material Deficiency Reporting and Investigating System
 TO 00-5-1, AF Technical Order System
 TO 00-5-15, AF Time Compliance Technical Order System
 TO 00-5-18, USAF Technical Order Numbering System
 TO 00-5-19, Security Assistance Technical Order Program
 TO 00-5-2, Technical Order Distribution System
 TO 00-5-3, AF Technical Manual Acquisition Procedures
 TO 1F-16A-37, Calibration and Measurement Summary for F-16 Weapons System
 TO OO-25-107, Maintenance Assistance

Abbreviations and Acronyms

| | |
|-------------|---|
| 75 CS/SCSP | Publishing Management |
| 75 MSS/DPEE | Education Services and Military Training |
| 75 MSS/DPEO | Employee Development Operations Section |
| ACO | Administrative Contracting Officer |
| AGE | Aircraft Ground Support Equipment |
| AFMC | Air Force Materiel Command |
| AFMETCALP | Air Force Metrology and Calibration Program |
| ALC | Air Logistics Center |
| C3I | Command, Control, Communication, Intelligence Systems |
| CAMS | Core Automated Maintenance System |
| CAR | Corrective Action Request |
| CI | Core Inspection |
| CVP | Conformance Verification Program |
| DCAA | Defense Contract Audit Agency |
| DDOU/E Hill | Product Receipt & Evaluation |
| DLA | Defense Logistics Agency |
| DCMA | Defense Contract Management Agency |
| DMAG | Depot Maintenance Activity Group |
| DMISA | Depot Maintenance Interservice Agreement |
| DMMAR | Depot Maintenance for Aircraft Repair |
| DOD | Department of Defense |
| DR | Deficiency Reporting |
| DREP | Depot Repair Enhancement Program |
| EDSC | Engineering Data Service Center |
| ESD | Electrostatic Discharge |
| E&I | Examination and Inventory |
| FAR | Federal Acquisition Regulation |
| FEMS | Facility Equipment Maintenance System |
| FCF | Functional Check Flight |
| FMS | Foreign Military Sales |
| FOD | Foreign Object Damage |
| GSA | General Services Administration |
| GSD | General Support Division |
| ICBM | Intercontinental Ballistic Missile |

| | |
|---------------|--|
| ITS | Inventory Tracking System |
| JEDMICS | Joint Engineering Data Management Information and Control System |
| MAPA | Mature and Proven Aircraft |
| MDM | Mobile Depot Maintenance |
| MDS | Mission, Design, Series |
| MET | Mission Essential Tasks |
| MGM | Material Group Manager |
| MIPR | Military Interdepartmental Purchase Request |
| MISO | Maintenance Interservice Support Officer |
| MRRB | Material Requirements Review Board |
| MRT | Maintenance Review Team |
| MSEP | Maintenance Standardization Evaluation Program |
| MWR | Maintenance Work Request |
| NDI | Non-Destructive Inspections |
| NIST | National Institute of Standards and Technology |
| OI | Operating Instruction |
| O&A | Over and Above |
| O&I | Organizational and Intermediate |
| OO-ALC | Ogden Air Logistics Center |
| OO-ALC/LA | – Aircraft Directorate) |
| OO-ALC/LAOCAF | – C-130 Prep-for-Flight/Paint Section |
| OO-ALC/LAOHA | – A-10 Production Section |
| OO-ALC/LAOFAF | – F-16 Prep-for Flight/Paint Section |
| OO-ALC/LAMQ | – Aircraft Quality Branch |
| OO-ALC/LI | – Commodities Directorate |
| OO-ALC/LM | – System Program Office |
| OO-ALC/LMKE | – Engineering Service Modifications Guidance and Navigation Branch |
| OO-ALC/TI | Technical and Industrial Support Directorate |
| OO-ALC/TIED | Engineering Data Production Section |
| OO-ALC/TIEL | Laboratory Branch |
| OO-ALC/TIPL | Precision Measurement Equipment Laboratory |
| OO-ALC/TIPT | Support Branch |
| OO-ALC/TIU | Logistics Training Division |
| OO-ALC/XP | Plans and Programs Directorate |
| OO-ALC/LG | Logistics Management Directorate |
| OO-ALC/LGP | Depot Maintenance Division |
| OO-ALC/QL | Specialized Management Directorate |
| OO-ALC/EM | Environmental Management |
| OO-ALC/LC | Mature and Proven Aircraft Directorate |
| OO-ALC/PK | Contracting Directorate |
| OO-ALC/PKOS | Contracting Operational Services Branch |
| OO-ALC/SE | Safety Office |
| OO-ALC/BC | Small Business Office |
| OO-ALC/YP | F-16 Management Directorate |
| OO-ALC/DPC | Civilian Personnel) |
| OPR | Office of Primary Responsibility |
| PAC | Production Acceptance Certification |
| PAO | Project Administration Office |

| | |
|--------|---|
| PCO | Procuring Contracting Officer |
| PCCIE | Power Conditioning and Continuation Interfacing Equipment |
| PIC | Prime Integration Contract |
| PME | Precision Measurement Equipment |
| PMEL | Precision Measurement Equipment Laboratory |
| PR | Purchase Request |
| QA | Quality Assurance |
| QAE | Quality Assurance Evaluator |
| QAIP | Quality Assurance Integrated Process Team |
| QAS | Quality Assurance Specialist |
| QMB | Quality Management Board |
| QPI | Quality Performance Indicator |
| QVI | Quality Verification Inspection |
| RFP | Request for Proposal |
| RIM | Retail Item Manager |
| ROD | Report of Discrepancy |
| RQA | Request for Quality Assistance |
| RTR | Recurring Training Requirement |
| SATOP | Security Assistance Technical Order Program |
| SEI | Software Engineering Institute |
| SMAG | Supply Management Activity Group |
| SPD | System Program Director |
| SSC | Shop Service Center |
| SSQ | Special Skills Qualification |
| STSC | Software Technology Support Center |
| SW-CMM | Software Capability Maturity Model |
| TCTO | Time Compliance Technical Order |
| TE | Task Evaluation |
| TMDE | Test, Measurement, and Diagnostic Equipment |
| TO | Technical Order |
| TODO | Technical Order Distribution Office |
| UCI | Unit Compliance Inspection |
| WCD | Work Control Document |
| WSSC | Weapon Support Center |